REMARKS

By the present amendment, claim 6 has been amended to obviate the examiner's objections thereto and/or to further clarify the concepts of the present invention. Specifically, claim 6 has been amended to be dependent upon claims 1 and 2 instead of cancelled claim 5. It is submitted that this amendment to claim 6 does not raise new issues which would require further consideration and/or search. In addition, it is submitted that such amendment places the application in better form for appeal by materially reducing or simplifying the issues for appeal. Furthermore, no additional claims are presented without canceling a corresponding number of finally rejected claims. In view of the above, it is submitted that entry of the above amendments is in order and such is respectfully requested.

In the Office Action, the amendment of claim 1 in the prior Amendment was found to be objectionable. In particular, the clean copy of the claim as set forth in this prior Amendment still included a deleted phrase. In addition, it was noted that claim 6 depended from cancelled claim 5.

In response, the failure to delete the noted phrase in claim 1 was an oversight. The clean copy of claim 1 as set forth above is believed to be accurate in this respect. With regard to the rejection of claim 6, the claim is now dependent upon claims 1 and 2. Accordingly, withdrawal of the rejection under the second paragraph of 35 U.S.C. § 112 is respectfully requested.

Claims 1-4 were rejected under 35 USC § 103(a) as being unpatentable over the patent to Mori et al in view of the patent to Kawagoe et al. In making this rejection, it basically was asserted that the cited Mori et al patent teaches Al-Si or Al-Si-Sn compositions with ranges for the disclosed components which overlap those as claimed in independent claims 1 and 2. It was acknowledged that the Mori et al patent does not teach the use of (a) HVOF flame spraying of applying the alloy and (b) surface roughening of the substrate by shot blasting. As to the former (a), it was alleged that the HVOF is a well known form of thermal spraying as taught by the Mori et al patent. As to the latter (b), the cited patent to Kawagoe et al was asserted to provide this teaching deficiency. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

It is submitted that the cited Mori et al patent does not teach or suggest the subject matter as is now set forth in amended claims 1 and 2 and the claims dependent thereon. Among other things, it is submitted that an important difference between the subject matter as set forth in independent claims 1 and 2 and the cited patent is that the composition according to the invention is "flame-sprayed by means of high velocity oxy-fuel flame-spraying method (HVOF) onto a substrate roughened by shot blasting" as opposed to being thermally sprayed as taught by the Mori et al patent. In addition, the flame-sprayed aluminum alloy has adhesive strength of film higher than that of a flame-sprayed Ni film, as measured by a shear-fracture testing method.

The position taken in the Action relative to the products according to the Mori et al patent was that the burden of showing that the products according to the invention patentably distinguish over the products according to the patent is placed upon applicants. In order to overcome this position, applicants submit that the products according to the claimed invention differ from those of the patent in terms of structure and thus one or more properties and these differences produce unexpected or surprising results.

More particularly, the morphology of Si particles dispersed by the HVOF method is such as shown in Fig. 1 of the present application and is significantly different from that shown in Fig. 1A of the Mori et al patent. From a comparison of the two microphotographs, it is evident the morphology is different, particularly with reference to the following:

(1) The Si particles are rounded modular, specifically, the ratio of short diameter is 1/3 or more (page 3, line 36) in the present invention, while several of the Si particles are needle-shaped, i.e., the ratio of short diameter/long diameter is less than 1/3 in the Mori et al patent.

(2) The inclusion of relatively coarse Si particles of more than 10 μm as shown in Fig. 1 of the present application contributes to enhance both wear resistance and seizure resistance with the materials according to the present invention. In contrast, the Si particles are fine (less than 10 μm) in the Mori et al patent and only contribute to enhance the wear resistance.

In view of the above, it is submitted that the alloys according to the claimed invention differ from those of the cited Mori et al patent in terms of one or more of proportions, structure and/or properties and these differences produce unexpected or surprising results.

It is submitted that the above noted teaching deficiencies of the Mori et al patent are not supplied by the Kawagoe et al patent. Specifically, it is submitted that one of ordinary skill in the art would not employ the surface roughening as taught by the secondary Kawagoe et al patent in the product as disclosed in the primary patent to Mori et al. Therefore, one of ordinary skill in the art would not be led to select or turn to the teachings of the secondary patent.

As is well settled, obviousness under Section 103 of the statute requires a teaching or suggestion in the art to combine the teachings of the patents as proposed by the examiner with the expectation that the results achieved would have been predicted by that person of ordinary skill. The patents provide no suggestion to motivate one of ordinary skill in the art to combine their teachings in the manner proposed by the examiner. It is an established principle of U.S. patent practice that the prior art must contain some suggestion for combination since without such, any combination is pure speculation on the part of the examiner and is based on a prohibited hindsight reconstruction from applicants' own disclosure.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 103 and allowance of claims 1 through 4 over the cited patents are respectfully requested.

Claim 6 was rejected under 35 USC § 103(a) as being unpatentable over the same patent to Mori et al in view of the patent to Kawagoe et al further in view of the patent to Wilkoz et al. In making this rejection, it was acknowledged that the combination of the Mori et al and Kawagoe et al patents does not teach a layer covering the outer surface of the wear resistant coating. The additionally cited Wilkoz et al patent was then asserted to provide this deficiency. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

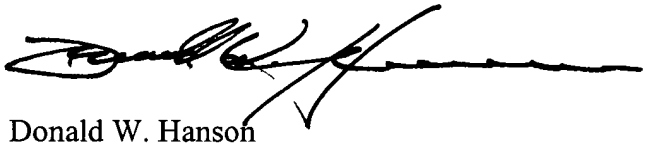
It is submitted that essentially the same considerations as were set forth above with respect to the first prior art rejection would also apply equally as well to this rejection of the dependent claim 6. Accordingly, withdrawal of the rejection under 35 U.S.C. § 103 and allowance of claim 6 over the cited patents are respectfully requested.

In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



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Marked Up Version of Amendments to Specification and Claims

IN THE CLAIMS:

6. (Twice Amended) A flame-sprayed aluminum-alloy according to claim ~~5~~ 1 or 2, wherein a coating containing a material selected from the group consisting of Sn, Pb-Sn and MoS_2-graphite is applied on said flame-sprayed aluminum alloy.